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(72) Inventor: **Nagata, Yoshifumi**
Kobe-shi, Hyogo-ken (JP)

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(74) Representative:
Zangs, Rainer E., Dipl.-Ing. et al
Hoffmann Eitle,
Patent- und Rechtsanwälte,
Arabellastrasse 4
81925 München (DE)

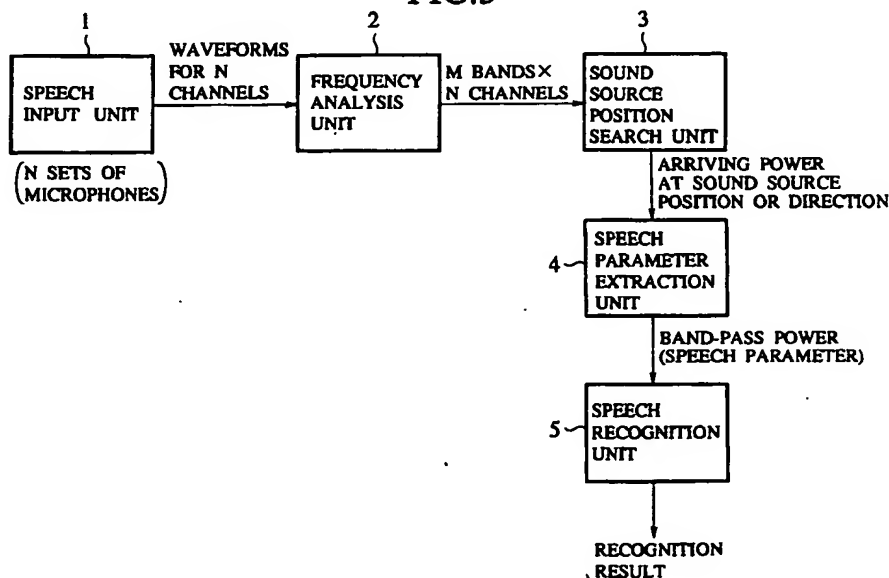
(71) Applicant:
KABUSHIKI KAISHA TOSHIBA
Kawasaki-shi, Kanagawa-ken 210 (JP)

(54) **Method and system for microphone array input type speech recognition**

(57) A microphone array input type speech recognition scheme capable of realizing a high precision sound source position or direction estimation by a small amount of calculations, and thereby realizing a high precision speech recognition. A band-pass waveform, which is a waveform for each frequency bandwidth, is obtained from input signals of the microphone array, and a band-pass power of the sound source is directly obtained from the band-pass waveform. Then, the

obtained band-pass power is used as the speech parameter. It is also possible to realize the sound source estimation and the band-pass power estimation at high precision while further reducing an amount of calculations, by utilizing a sound source position search processing in which a low resolution position estimation and a high resolution position estimation are combined.

FIG.3





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 97 10 4406

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	SULLIVAN T M ET AL: "MULTI-MICROPHONE CORRELATION-BASED PROCESSING FOR ROBUST SPEECH RECOGNITION" SPEECH PROCESSING, MINNEAPOLIS, APR. 27 - 30, 1993, vol. VOL. 2, no. -, 27 April 1993, pages II-91-94, XP000427733 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS * paragraph 2; figure 1 *	1,10,12, 14,23,25	G10L3/00
A	HUANG J ET AL: "A BIOMIMETIC SYSTEM FOR LOCALIZATION AND SEPARATION OF MULTIPLE SOUND SOURCES" IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, vol. 44, no. 3, 1 June 1995, pages 733-738, XP000527552 * paragraph II; figure 1 *	1,10,12, 14,23,25	
A,D	BUB U ET AL: "KNOWING WHO TO LISTEN TO IN SPEECH RECOGNITION: VISUALLY GUIDED BEAMFORMING" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING (ICASSP), DETROIT, MAY 9 - 12, 1995 SPEECH, vol. VOL. 1, 9 May 1995, pages 848-851, XP000670541 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS * paragraph 2.1; figure 2 *	1,10,12, 14,23,25	TECHNICAL FIELDS SEARCHED (Int.Cl.6) G10L
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 3 August 1998	Examiner Wanzeele, R
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			